



SARC

Communicator



October 2011

Digital Modes

PSK, RTTY and others

Radio-Active

John Brodie VA7XB

Tech Talk

A Dummy Load

Plus

Meeting Minutes

Snapshot

President's Report

SEPARS Report

QRM

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The Monthly Newsletter of the Surrey Amateur Radio Club



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AMATEUR RADIO CLUB**

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The SARC Communicator is published monthly for members of the Surrey Amateur Radio Club.

SARC maintains a website at www.ve7sar.net that includes club history, meetings, news and other information.

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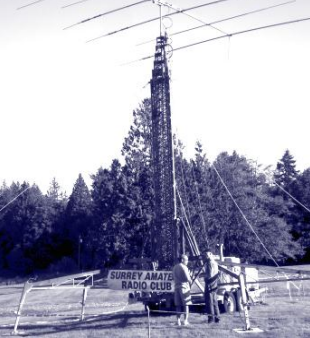
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September Meeting Minutes

Susan Eshelman VE7IIE—SARC Secretary

The meeting was convened at 7:05 p.m. by President John Brodie

INTRODUCTION & WELCOME

John Brodie VA7XB welcomed guests, noting that the Minutes from the last general meeting were published in the Communicator. With no reply to a request for revisions, the minutes were adopted without vote.

New members were introduced and greeted and an attendance list was circulated.

The Langley Amateur Radio Association (LARA) has announced its new slate of officers, and a complete list is available from John VA7XB.

SARC dues are now payable for the new season. There is a grace period until the end of the year, by which time all dues must be paid for insurance purposes. Individual dues are \$30; Families - \$40; and a \$5 discount for RAC members. Club name badges are \$10, and the Treasurer has a number of ordered badges ready for pick-up.

John Schouten VE7TI reported that the last open spot has been filled for Net control. John VA7XB asked for names for the backup list, noting that the Net

schedule and script are available on our website: www.VE7SAR.net.

FINANCIAL REPORT

Treasurer Scott Hawrelak VE7CNR provided a financial report, including bank and term deposit balances and accounts receivable items.

Flea Market: Scott reported that the August Flea Market, held in conjunction with the Langley club, was successful this year. Raffle prizes were the biggest expenses. John VA7XB noted that the club generated some extra income from donated equipment.

Field Day Report: Scott gave a report of Field Day income and expenses. A small net loss was split with the Langley club. Net loss included a significant one-time expense this year for rope and ladder line. There was no rental cost for the event site, which was secured with the assistance of Surrey Fire Services.

Surrey Community Grant: John VA7XB reported that a new Grant application for a financial contribution to Field Day is going in at the end of this month. A smaller grant is being sought this year.

Lottery Grant: An application will not be submitted this year, as the club has

CLUB EXECUTIVE 2011-2012

PRESIDENT

John Brodie VA7XB

VICE PRESIDENT

Bill Gipps VE7XS

SECRETARY

Susan Eshelman VE7IIE

TREASURER

Scott Hawrelak VE7HA

DIRECTORS

Kelvin Hall VA7KPH
(SEPARS)

John Schouten VE7TI
(Communicator Editor)

Gary Skett VE7AS
(Education/Training)

George Merchant
VE7QH (Repeaters)

Bill Little VA7ZBL
(Membership)

Chris Zetner VA7CMZ

SARC hosts an Amateur Radio net each Tuesday evening at 8 PM. Please tune in to the VE7RSC repeater at 147.360 MHz (+600 KHz) Tone=110.9, (optional Tone Squelch 110.9) also accessible on IRLP node 1980 and Echo-link node 496228. On UHF we operate a repeater on 443.775MHz (+5Mhz) Tone=110.9 Coming soon, a repeater at 224.000MHz (-1.6MHz).

	SEPARS Net	SARC Net
1 st Tuesday	Drew VA7DRW Jay VE7OFH Standby	Drew VA7DRW
2 nd Tuesday	Dixie VA7DIX Alan VA7BIT Standby	Alan VA7BIT
3 rd Tuesday	Rob VE7CZV	John VA7XB
4 th Tuesday	Bill VE7XS Dixie VA7DIX Standby	Anton VE7SSD
5 th Tuesday	Jinty VA7JMK	Bill VE7XS
Want a turn at Net Control? Contact the Net Manager ve7ti@separs.net		

still not completed its expenditure of funds previously granted. A decision will be made about allocating cash reserves currently in the club account.

A member asked if the club has a utility trailer. We do not, and storage is a concern. SARC is currently sharing SEPAR's space at the No. 10 Firehall, and it's getting full. There are personal insurance issues with storing items in member homes.

John Schouten VE7TI reported that SEPAR just bought a 12x8x6 trailer to move Go Kits, and some operating stations may be maintained there to serve as a mobile unit. The trailer will be stored at No. 17 Firehall.

REPEATER

John Brodie VA7XB gave a report on the club Repeater project. Equipment is being purchased for installation at the new site, a 36-story high rise in Surrey that will be superior to the old site. Surrey Fire is negotiating a lease with the building owners, and it's a work in progress. Most of the needed equipment is in hand and being assembled. A discussion followed about disposal of old 2m duplexers, with consensus that the old equipment should be donated to Dave Cameron VE7LTD.

John VA7XB discussed the Repeater budget. He noted that the old Repeater will stay in service at least until the new site can be tested, and the option of linking the two is under discussion.

HAM CLASS REPORT

Gary Skett VE7AS gave a report on the upcoming Basic Ham class, which begins on September 29th. Registrations now stand at 19. The venue is still at the Training Center, although the New Ham seminar will be at No. 9 Firehall this time. Scott Hawrelak VE7CNR inquired regarding our textbook supply, Gary noting that we'll have 11 left after this class. The books are bought 20 at a time.

PROGRAM SCHEDULE

Gary Skett VE7AS gave an overview of the program selection process currently underway. He handed out a questionnaire, asking for member input into topics of interest. It was suggested that various formats could be offered, for example, periodically presenting a slate of several brief speakers rather than a single long lecture, or a panel discussion. Gary will have Webmaster Hiu Yee VE7YXG put the questionnaire on the website, so all members can give input. In the meantime, Gary will arrange a program for the October meeting.

Gary suggested a presentation on using our Repeaters.

AWARD CEREMONY

Gary Skett VE7AS, speaking on behalf of this year's Nominating Committee, described the difficulty encountered in identifying a new candidate for the office of President. Fortunately, however, John Brodie announced that although he had plans to retire from office, he was willing to take the job again. With thanks for his contribution and ongoing service to the club, Gary presented John with a beautiful carved wooden VA7XB for his desk (*see cover photo*).

INDIA PROJECT

Susan Eshelman VE7IIE described a project she's been discussing with SARC Exec and a few members to see if there's potential for club participation. Under exploration is the idea of organizing a Special Event contest in which a number of stations would be set-up at various sites of historical importance in India. Susan would organize friends/hams in her extended community in India who would operate the stations. Hams worldwide who would be invited to contact them during the event. Working with hams and clubs in India, Susan would provide web support and promotion for the event.

For SARC and other North American hams, making contact with India would present a significant technical challenge, but that might also generate interest in the project. Jim Smith VE7FO has contributed some great ideas for organizing such an event, and a preliminary survey is now being taken by Susan to determine availability of antennas on the India side that would make the project viable, particularly for British Columbia ham participation. Bill Gipps VE7XS has offered use of facilities at 'The Project' for the event.

Bill also mentioned that Neil King VA7DX has set-up a station in Mongolia, and welcomes BC hams who would like to make contact.

DARS EVENTS

Nicole Stopa VE7PET gave a report on upcoming events of the Delta Amateur Radio Society (DARS). On October 2, 2011, a fund-raising event will be held for the club -ComFest Amateur Radio, VHF Marine and Computer swap meet. The event will be held in Tsawwassen at the Rec Center. DARS is also running an Advanced Course starting Oct 27th. Information on both are available on their website:

www.deltaamateurradio.com.

(Continued on page 4)

DOWN THE LOG...

SARC Monthly Meetings

2nd Wednesday (Sept-Jun)
1900 hrs local at the Emergency
Management BC PREOC,
14275 96th Avenue, Surrey, BC

Weekly Club Breakfast

Friday at 0830 hrs
ABC Country Restaurant at
600 - 7380 King George Blvd.
Surrey

SARC Net

Tuesday at 2000 hrs local
on 147.360 MHz (+) Tone=110.9

SEPARS Net

Tuesday at 19:30 hrs local
on 147.360 MHz (+) Tone=110.9

Announcements & News

Next SARC Meeting
Wed. Oct 12th 1900 @ PREOC
The Digital Modes (see Page 6)

SEPARS Monthly Workshop
Thurs., Oct. 13, 19-2130hrs
Rm. 214, 13569 76th Ave.

SEPARS Library Workshop
and Demonstration
Saturday, Oct 22nd 0830 hrs,
Surrey Fleetwood Library.

On the Web ve7sar.net

Between newsletters, watch your e-mail for announcements of events, monthly meetings and training opportunities. These announcements may also be found on our web page.

Twitter
@ve7sar



SEPARS Report Kelvin Hall VA7KPH

The fall agenda for SEPAR began with the Thursday night meeting on September 15th followed by the Saturday morning workshop on September 24th. The workshop was oriented towards the operation of the Radio Room in Fire Hall #1 and what to do if you are the first and possibly the only SEPAR member that could be there if a major emergency event occurs. A discussion of how to ramp-up staffing as people arrive and when to relinquish the Incident Commander position was discussed.

As a part of the Saturday session members were able to listen in on Flood Emergency conference calls for the Central Coast of BC with the Provincial Emergency Coordination Centre (PECC), Victoria and the Emergency Operations Centre (EOC), Bella Coola. This gave SEPAR members an understanding of the bigger picture of what happens outside of the Radio Room and how amateur radio could assist in this type of emergency.

On Sunday September 26, SEPAR participated in CN Rail Family Day providing information and demonstrations to CN employees and their families. Response was good and many people were surprised as to what we are able to accomplish with radios and antennas. A few older CN Rail 'hams' that have not used their radio for years were given the opportunity to use the radios and may now come back to the hobby, hopefully joining both SARC and SEPARS.

SEPAR will be undertaking a second library event at the Fleetwood Library on Saturday October 22nd. We will incorporate this workshop into a learning event for the youth and also do a demonstration of what SEPAR is capable of doing in an emergency situation. There will be more to follow on this as we work on the agenda. Your skill sets will be welcomed to assist in making this successful and entertaining for the public. If you are new to amateur radio this is a great learning experience - do not hesitate to attend as we will assist you along the way.

To promote SEPAR within the community we are looking at some of the successful marketing ideas of other exhibitors at Canada Day and CN Rail Family Days. The use of tattoo transfers, stickers and colouring pages for the younger crowd and QSL cards for the adult group will help promote our presence in the community's emergency response program. We are seeking your input as to what you and your family may have seen at other community events that attracted the public to their exhibits.

SEPAR is always looking for new members to assist the community in times of emergency situations. SEPAR offers training in the Incident Command System (ICS), the use of radios during emergencies and the integration of SEPAR in the Emergency Operations Centre (EOC). If you are up to the challenge please contact me at va7kph@separs.net

Please join our Tuesday night net 1930 hrs on 147.360(+) tone 110.9



(Continued from page 3)

TASKS & DUTIES

Bill Gipps VE7XS facilitated a club tasking process wherein a spreadsheet was projected, showing the numerous tasks and areas of responsibility needed for club operations and activities. Names of those already committed to assist were shown, and the members spent some time working through the list, asking for and recording volunteers for the open tasks. With several duties still unassigned, members are encouraged to contact Bill VE7XS or John VA7XB to volunteer assistance to SARC. The most prominent unfilled jobs relate to Christmas party, equipment maintenance and nominations committee.

OPERATOR SKILLS PROJECT

John Brodie VA7XB gave a presentation on the operator training program currently getting underway. Jim Smith VE7FO, a new SARC member and seasoned ham, has offered to do some serious training for operators. The project is a follow-up to Field Day, which demonstrated some needed areas of operation training. Initially, training will occur in the context of contesting, which serves as a good venue for learning and honing many important skills. The weekend of September 25th, the first session will be held at John VA7XB's station, for an RTTY contest.

Bill VE7XS noted that digital modes are great for training environments, because you don't need lots of antenna or power. 25 watts can get you to many countries. PSK and RTTY are also great for new hams because the digital operator community is very welcoming. John VA7XB suggested that an introduction on digital modes would be a good talk. Gary VE7AS also mentioned a book that would be helpful for training: published by the Amateur Radio Relay League and Durham, the book is called <I>Hamspeak</I>, and it's a dictionary of jargon.

OTHER DISCUSSION

There was a brief discussion on the cost of RAC insurance, and the fact that RAC is passing a cost break along to clubs. For individual RAC members, club affiliate insurance extends to you. Those who are not yet RAC member get coverage during club activities only.

Following the 50-50 draw, the meeting was adjourned.

The next meeting will be held the second week of October, per the usual schedule.



Radio-Active Susan Eshelman VE7IIE

Today we have the pleasure of introducing one of SARC's leading members - our current club President, **John Brodie VA7XB**. John first got his ham license at the age of 15, in 1960, but in a few years he was off to university and the start of a busy life. It wasn't until 2002 that he had an opportunity to return full-time to the hobby, with a new call sign and renewed enthusiasm for Amateur Radio.

With a degree in Metallurgical Engineering, John didn't have a professional focus on electronics, but always had a casual interest. Having grown up with tube technology, by the time he returned to the hobby, everything was solid state and radio had become very integrated with computers.

In the early days, John loved building radio components even more than operating. He made a lot of his own equipment, and at one point had the ambition to complete a totally home-built station. He never quite got to that finish line, with equipment changing as technology constantly improved, but in the 1970's he did enjoy building a 5-band receiver (that worked) and almost completed a 5-band transmitter. One of John's old homebrews made an appearance at this year's Field Day - an "Ultimate Transmatch" antenna tuner that saved the day in helping to get the Vee-beam properly matched.

John's station ([see page 12](#)) remains a work in progress. Today his interest has shifted more to operating than building, although he still enjoys both. As full-retirement approaches, John purchased his 'dream radio' for the next phase - an iCom 7600 that runs with an inverted V for 40 and 80 meters, and a SteppIR vertical for the higher bands. Very recently, John relocated his station from a home office to a larger workshop, which will serve as an occasional venue for SARC members participating in the new contesting/op-training sessions begun in late September with Jim Smith VE7FO.

John primarily operates HF on CW, with a growing interest in CW and RTTY contesting. He loves chasing DX, and particularly enjoyed making contact with South Africa from his home station. Prior to that his best contacts were Morocco and a few others in North Africa. John did CW for a few years early on, but when he came back to it 40 years later, he found that he picked it right up again. He encourages everyone who learned CW when

they were young but have since forgotten to pick it back up again -- like riding a bike, you just need to get back on.

John joined the Surrey club in 2002, when he returned full-time to the hobby. Since then, he's been active as a general member and on the Executive as Treasurer, Vice-president and President. John also serves as an official Examiner for the ham course. He is currently on his second full term as President, after stepping up mid-term to the office. Recognizing the importance of a regularly changing Exec, he's intent on encouraging other members to run for office and help lead the club into the future.



Over the last three years, John sees the growth in membership as the most significant change in SARC. While four or five years ago there were only 20 members, today the club has crossed the 100-member mark. The growth is a good indicator that club programs and activities appeal to people. He also notes the many high caliber new members that have joined, bringing impressive and varying backgrounds in Amateur Radio to the club.

John continues to be inspired by the always changing technical aspects of the hobby, as well as by the people behind the radios. His other consuming interest in recent years has been genealogy, although he and his wife Heather now enjoy the 'competing interest' known as grandkids. Whether or not future members of the Brodie family tree end up with a call sign remains to be seen. Next generation members, whether related to family or club, certainly couldn't ask for a better mentor. For his part, John has appreciated the mentoring he's gotten over the years from many SARC members, and particularly Fred Orsetti VE7IO, who's helped him over some of the more intimidating computer obstacles.

While not currently active on the SEPAR side, John has been a participant in that sphere, as well. With an equal appreciation for both the em-comm and tech/experimentation sides of the hobby, John has been a diligent supporter of Amateur Radio across the board, including the fun hobby and social aspects.

As shown in the picture on the front cover, John was recently recognized for his ongoing committed service to the Surrey Amateur Radio Club, for which he has all our appreciation.

A Beginner's Look At PSK

And The Digital Modes

Hams led the development of digital communications in the 1980s and modern personal computers have encouraged the use of digital modes such as Phase-Shift Keying (PSK) and radioteletype (RTTY), which previously required cumbersome mechanical equipment. Specialized digital modes such as PSK31 allow real-time, low-power communications on the shortwave bands using very little (31Hz) bandwidth.

Phase-shift keying (PSK) is a digital modulation scheme that conveys data by changing, or modulating, the phase of a reference signal (the carrier wave).

PSK31 was developed and named by English amateur radio operator Peter Martinez (G3PLX) and introduced to the wider amateur radio community in December 1998.

produces an audio tone which sounds, to the human ear, like a continuous whistle with a slight warble. This is then fed through either a microphone jack (using an intermediate resistor to reduce the sound card's output power to microphone levels) or an auxiliary connection into the transceiver, where it is transmitted.

From the perspective of the transmitter, this amounts to little more than somebody whistling into the microphone. However, the software rapidly shifts the phase of the audio signal between two states (hence the name "phase-shift keying"), forming the character codes. These phase shifts serve the same function as the two tones used in traditional RTTY and similar systems.

To decode PSK31, the received audio whistle from the transceiver's headphone output is fed into the sound card's audio input, and the software decodes it. The software also includes a user interface on the PC, which is used to display the decoded text and manage the software configuration.

The use of PSK31 does not require exclusive use of a dedicated computer. A PSK31 signal can be modulated via a computer soundcard, as can other interesting modes such as RTTY, Hellschreiber, Olivia MFSK etc.; thus, the PSK31 computer can be utilized to explore a variety of modes.

In addition to a standard radio transceiver, very little equipment is required to use PSK31. Normally, an older PC and a few cables will suffice; the software is both free to download and runs happily on old, slow computers from the early Pentium era or even earlier. Many operators now use a commercially available interface/modem device (or 'nomic') between their computers and radios. These devices incorporate the necessary impedance matching and sound level adjustment to permit the soundcard's output to be injected into the microphone input, the radio's audio output to be sent to the soundcard's input, and also handle the radio's transmit-receive switching. Recently introduced interfaces also incorporate their own soundcard, and can therefore be powered and run from the PC via one single USB connection.

Radioteletype (RTTY) is a telecommunications system consisting originally of two or more electromechanical teleprinters in different locations, later superseded by personal computers (PCs) running software to emulate teleprinters, connected by radio rather than a wired link.



Digital mode software is easily obtainable and free. Equipment, antenna and power requirements are minimal.

PSK31 was enthusiastically received, and its usage grew like wildfire worldwide lending a new popularity and tone to the on-air conduct of digital communications. Due to the efficiency of the mode, it became, and still remains, especially popular with operators whose circumstances do not permit the erection of large antenna systems and/or the use of high power

A PSK31 operator typically uses a single sideband transceiver connected to the sound card of the PC. When the operator enters a message for transmission, the software

The term radioteletype is used to describe:

either the entire family of systems connecting two or more teleprinters or PCs using software to emulate teleprinters, over radio, regardless of alphabet, link system or modulation,

or specifically the original radioteletype system, sometimes described as "Baudot".

Landline teleprinter operations began in 1849 when a circuit was put in service between Philadelphia and New York City. Émile Baudot designed a system using a five unit code in 1874 that is still in use today. Teleprinter system design was gradually improved until, at the beginning of World War II, it represented the principal distribution method used by the news services.

Radioteletype evolved from these earlier landline teleprinter operations. The US Navy Department successfully tested printing telegraphy between an airplane and ground radio station in August 1922. Later that year, the Radio Corporation of America successfully tested printing telegraphy via their Chatham, MA radio station to the R.M.S. Majestic. An early implementation of the Radioteletype was the Watsongraph, named after Detroit inventor Glenn Watson in March 1931. Commercial RTTY systems were in active service between San Francisco and Honolulu as early as April 1932 and between San Francisco and New York City by 1934. The US Military used radioteletype in the 1930s and expanded this usage during World War II. The Military used frequency shift keying technology and this technology proved very reliable even over long distances.

From the 1980s, teleprinters were replaced by computers running teleprinter emulation software. Today, both functions can be performed with modern computers equipped with digital signal processors or sound cards. The sound card performs the functions of the modem and the CPU performs the processing of the digital bits. This approach is very common in amateur radio, using specialized computer programs like MMTTY or MixW.

When a key of the teleprinter keyboard is pressed, a 5-bit character is generated. The teleprinter converts it to serial format and transmits a sequence of a start bit (a logical 0 or space), then one after the other the 5 data bits, finishing with a stop bit (a logical 1 or mark, lasting 1, 1.5 or 2 bits). When a sequence of start bit, 5 data bits and stop bit arrives at the input of the teleprinter, it is converted to a 5-bit word and passed to the printer or VDU.

The 5 data bits allow for only 32 different codes, which cannot accommodate the 26 letters, 10 figures, space, a few punctuation marks and the required control codes, such as carriage return, new line, bell, etc. To overcome this limitation, the teleprinter has two states, the unshifted or letters state and the shifted or numbers or figures state. The change from one state to the other takes

place when the special control codes LETTERS and FIGURES are sent from the keyboard or received from the line. In the letters state the teleprinter prints the letters and space while in the shifted state it prints the numerals and punctuation marks. Teleprinters for languages using other alphabets also use an additional third shift state, in which they print letters in the alternative alphabet.

TOR is an acronym for Teleprinting Over Radio. It is traditionally used to describe the three popular "error free" communication modes - AMTOR, PACTOR and G-TOR. The main method for error correction is from a technique called ARQ (Automatic Repeat Request) which is sent by the receiving station to verify any missed data. Since they share the same method of transmission (FSK), they can be economically provided together in one Terminal Node Controller (TNC) radio modem and easily operated with any modern radio transceiver. TOR methods that do not use the ARQ hand-shake can be easily operated with readily available software programs for personal computers.

The guest speaker on this topic at the October SARC meeting will be John MacFarlane F.R.G.S.

John started out as an SWL in the early 1960s as WPE3FNC and served as a communications officer in vessels of the Royal Canadian Navy in the late 1960s. In the early 1970s he operated a Government of Canada radio with the call XMJ333 for the National Parks Service of Canada in New Brunswick. John obtained his basic certification in 2005 when he passed the theory and code tests. He obtained his advanced qualification in 2007.



John is a member of the PODX 070 Club, the Feld Hell Club, the European PSK Club and the Delta Amateur Radio Society. Currently he is active on PSK31 on 40m, 20m and 15m but has an interest in Olivia, MFSK, HELL, RTTY and other digital modes. Recently he has become an enthusiastic RTTY & SSB contester.

John related that he has worked nearly 100 countries over a 3-year period using only 20 watts, at the lowest period of the sunspot cycle. He describes PSK as a "friendly" mode where the practitioners display an especially patient and helpful manner that is welcoming to beginners.

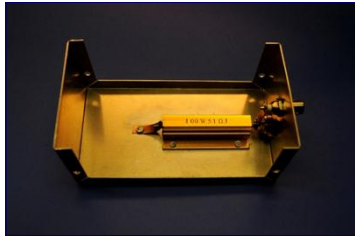
Next SARC Meeting - October 12

The next meeting of the Surrey Amateur Radio Club will feature a presentation on Digital Modes, including PSK and RTTY. Our presenter will be John MacFarlane

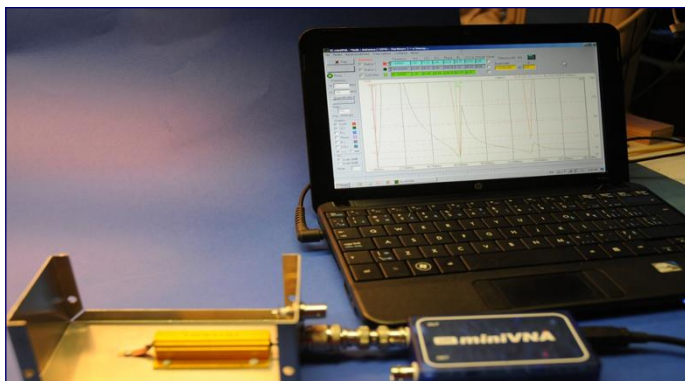


Application Notes Gary Skett VE7AS

"Gary, I made this here dummy load and can't figure out why I'm getting a 25:1 SWR!!" "Got such great deal on this 100 watt 51 ohm resistor off of e-bay and though it would make a great dummy load for the HF rig," he beamed as handed me the homebrew project. Did a nice job putting it into an aluminum project box, with both a UHF [SO-239] and a BNC connect-



or... But of course the first giveaway was the aluminum encased resistor, the second was that it was 100watts in a relatively small package... When we hooked it up to the MINIVNA, and saw how it reacted to a sweep from 1 to 180 MHz., I could see then that it wasn't your garden va-

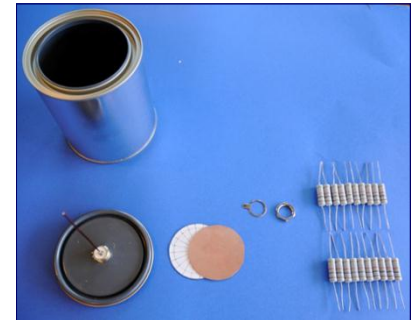


riety resistor... it was a wire-wound resistor - usually encased in an aluminum heatsink and a fraction of the size of a carbon composite resistor... And boys and girls, what do we know about something that's wound like a coil - an inductor? YessireeBob... it's an inductor - with enough wire to act like a proper load somewhere in the lower AM broadcast band... So the closer to 1 KHz or DC the better the SWR... so when he put 14.100 MHz into it, no wonder he measured 25:1!! Of course the eBay seller didn't say it was wire-wound and if you hadn't seen one before, it just looked like a nice bright and shiny deal at \$5.65.

So, we chucked that experiment in the cylindrical file and proceeded to make him an inexpensive dummy load.

Here is what you need. A paint can, you can buy new [and empty] for \$1.36 at Cloverdale Paint. A single hole SO-239 [\$1], a piece of solid copper wire, two 2½" copper discs [in the photo] one has the drilling pattern al

ready glued onto it AND... twenty 5 watt 1000 ohm carbon resistors. Ceramic will do too... about \$8 landed. [Note: 3" discs would have been better in retrospect]



The discs I cut from a piece of thin PCB, the resistors off of e-bay after I verified with the seller that they were not wire wound. After drilling the 22 holes in the discs and soldering all 20 resistors into place, one disc becomes the braid or shield side... the ground of the SO-239 and the piece of bare copper wire #10 or #12 bare copper goes from the centre pin on the connector to the disc on the bottom [of the photo] What you have when finished is 1000 divided by 20 or 50

ohms... but these are 5% resistors, and I didn't ask for 20 hand measured resistors, so of course they were not all 1000 ohms or higher... all it takes is one to be 5% low and it brings the whole array down below 50 ohms... this one here



measured 49.6 ohms.... close enough for its purpose. Yes John, this does present a small degree of capacitance and inductance - the discs do that... but it's not enough to cause a problem... Oh, and the resistors were 5 watts, so 20 times 5 = 100 watts as is... gets hot enough in 30 seconds that you would not be able to hold onto it for long.



Hooked up to the MiniVNA and it was rather decent! Not for 6 meters or higher... this was definitely a 1.8 to 30 MHz dummy load for under \$10 in parts and about 2 hours of labour. The SWR didn't change when put in the

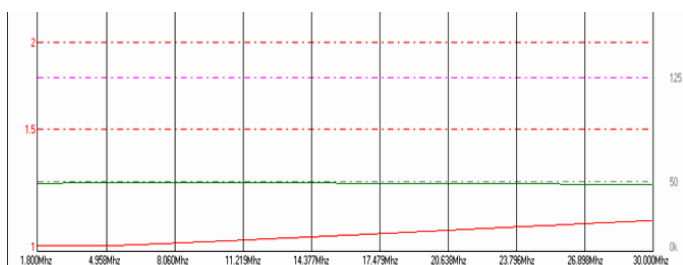
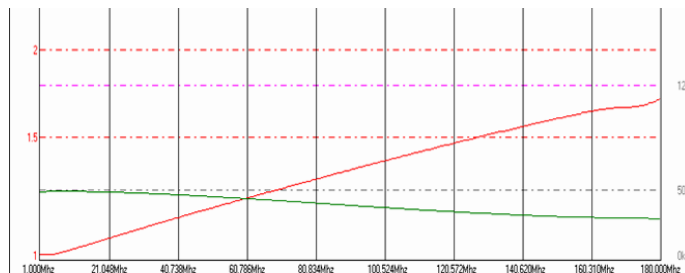


can... with 1 litre of pure mineral oil from London Drugs.. You could have used it as a dry load, but the oil makes it usable for minutes, rather than seconds and the paint can does reduce the RF radiated by roughly 60db.

As we can see from the sweep below, from 1.8 to 30 Mhz. the Impedance [green line] is pretty darn close to the 50 ohm reference line all across the entire HF band... the

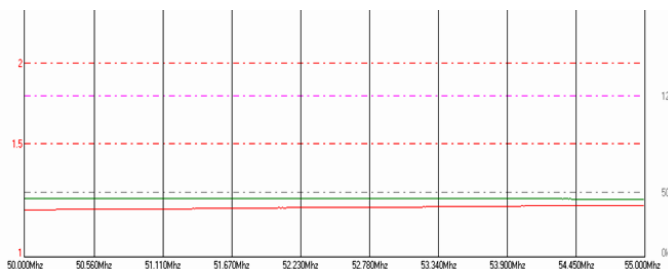
SWR 1.02:1 at 160 metres and about 1.26:1 at 30 MHz... OK, not a perfect dummy load... but it costs less than

sents the impedance of the load. From 1 to 21 Mhz. it's pretty good at staying near 50 ohms and with an SWR of less than 1.1:1. But as you can see by the time it climbs out of the 30 Mhz section, the impedance drops and the SWR climbs, so by the time it reached 180Mhz., the limit of my MiniVNA, it's almost 2:1 with an impedance closer to 30 than 50 ohms.



\$20, you can make it all at home and it does the job of giving your transceiver a non-radiating load for testing. The fancier commercial ones have LCR circuits incorporated in the array to compensate for the inductance and capacitance of the device - in other words, they doctor the load to get that perfect 1:1 across the band.

Mainly due to the construction of the dummy load, the 5% resistors soldered between two copper discs act somewhat like a capacitor, with the inductive reactance of lead lengths and 1¼ inches of #12 wire from the centre pin of the SO-239 and the lower disc, going through the centre of the discs, which must have some inductive quality. So not a perfectly symmetrical or resonant device, but as you have seen perfectly "HAM" in nature and quite adequate for the few times you need to test at full power without annoying others on the air.



You can see above, from 50 to 55MHZ, the SWR is about 1.3:1 across the six meter band, so it could be used if you needed to. But by the time you get to the 2 meter band, it's above 1.6:1 and not a good load. Thus commercial products tend to get more expensive the higher the frequency because you have to make them differently with higher tolerances, higher or more precise engineering and a few more parts to null out any inductive or capacitive reactance.

Next, the sweep below, from 1 MHz. to 180 MHz. is actually a good representation of most HF Antennas, MFJ and other 'non-VHF' dummy loads. The green line repre-

ComFest Swap Meet - Oct 2, 2011

Amateur Radio & Computer Swap Meet

Presented by The Delta Amateur Radio Society

Swap Meet Sunday, October 2nd, 2011

10:00AM - 1:00PM | Admission \$3.00 - | New & Used Radio Gear

South Delta Recreation Centre (Plenty Of Free Parking!)

1720 56th St. Tsawwassen, B.C. (~30 Minutes From Vancouver & Surrey)

Visit www.deltaamateurradio.com for full details or email g@deltaamateurradio.com

Tables Still
Only \$20

WOW!

Admission
Only \$3

Join The Fun! Score A Bargain! - New & Used

Plenty of great table locations still available.

Large 8' tables still only \$20.

Contact Gord VE7FKY (604) 200-1279

A great opportunity to sell your excess equipment.

VHF/UHF radios (Marine / Business / FRS) and computer equipment also welcome.

'Net' Working Internet Resources for Hams



What is that weird looking box on our cover and various other places in this publication? A QR code (abbreviated from Quick Response code) is a type of matrix barcode (or two-dimensional code) first designed for the automotive industry.

Created by Toyota subsidiary Denso Wave in 1994, the QR code is one of the most popular types of two-dimensional barcodes. The QR code was designed to allow its contents to be decoded at high speed. The system has become popular outside of industry due to its fast readability and comparatively large storage capacity. The code consists of black modules arranged in a square pattern on a white background. The information encoded can be made up of any kind of data (e.g. binary, alphanumeric, or Kanji symbols)

QR codes as of 2011 are used in a much broader context. Uses extend from commercial tracking to entertainment and from product marketing to in-store product labeling. QR codes storing addresses and Uniform Resource Locators (URLs) may appear in magazines, on signs, on buses, on business cards, or on almost any object about which users might need information. Users with a camera phone equipped with the correct reader application can scan the image of the QR code to display text, contact information, connect to a wireless network, or open a web page in the telephone's browser. A QR code can be generated with your station information or QRZ background page and printed on your QSL card. This act of linking from physical world objects is termed hardlinking or object hyperlinking.

Users can generate and print their own QR codes for others to scan and use by visiting one of several paid and free [QR code generating sites](#) or apps. Google has a popular API to generate QR codes, and Apps for scanning QR codes can be found on nearly all smartphone devices. QR codes can be used in Google's mobile Android operating system via both their own Google Goggles application or 3rd party barcode scanners like ZXing or Kaywa.

In the Apple iOS, a QR code reader is not natively included, but more than fifty paid and free apps are available with both scanning capabilities and hard-linking to URI available. With BlackBerry devices, the App World application can natively scan QR codes and load any recognized Web URLs on the device's Web browser. Following an upcoming update, Windows Phone 7 will be able to scan QR codes through the Bing search app.

In the US, QR Code usage is expanding. During the month of June 2011, according to one study, 14 million mobile users scanned a QR Code or a barcode. 58% of those users scanned a QR or bar code from their home, while 39% scanned from retail stores. 53% of the 14 million users were men between the age of 18-34.

What does this mean to you? Well, you will start to find QR codes at various places in our documentation and publications. If you have a smartphone you can quickly access the information.



In an effort to embrace the new technologies and (hopefully) build a younger membership, both

SARC and SEPARS now have a presence on Twitter. Twitter is an online social networking and microblogging service that enables its users to send and read text-based posts of up to 140 characters, informally known as "tweets", and images. Subscribers to one's Twitter account are known as "followers".

Twitter was created in March 2006 by Jack Dorsey and launched that July. Twitter rapidly gained worldwide popularity, with 200 million users as of 2011 generating over 200 million tweets and handling over 1.6 billion search queries per day. It is sometimes described as the "SMS of the Internet."

We hope to use Twitter to bring news to our followers faster than using current means such as the newsletter and website. We already have several followers and we are following the City of Surrey, ARRL newslines and several other sources for the latest developments in Amateur Radio. To view either or both feeds, follow [@ve7sar](#) and [@ve7hme](#) respectively.

By the way, did you know that you can 'tweet' from your ham radio? Have a look at the video at [twit-ter_using_ham_radio.htm](#) and at the [73s.org](#) website for the latest hambrief.tv episodes.

To send a message from the 73s website to a ham radio:

1. Log into [73s.org](#) and go to the home page or click on the status link
2. In the status bar, send a direct message to a ham callsign by entering "*d callsign This is a test*". Leave off the quotes and substitute the word callsign with an actual ham callsign and your message (This is a test) will be delivered to the ham's radio via APRS text messaging! Here is an example:

d n7ice I love the 73s.org website

The delivery of this message is in real-time! In the example above, N7ICE would receive your tweet and it would be noted that it was sent via 73s.org.

Send a message from your ham radio to 73s (and Twitter):

1. Using your ham radio's APRS text messaging functionality, send a message to "73S" (without the quotes).

That's it! 73s is monitoring the APRS stream every minute looking for messages directed to 73S and posting them on 73s.org as a status message and echoing these messages to Twitter in real-time! APRS tweets will post under the @73s profile. Status updates sent via APRS will note "via APRS" at the end of the message.

How cool is that?! They hope to deliver more features between your radio and 73s using this new technology in the near future! Features that we are contemplating include: google search results, QSO log updates, weather and DX traffic, etc.

QRM ...from the Editor's desk



*Do you have a photo or bit of club news to share?
Something to sell or something you are looking for?
Email it to ve7ti@separs.net for inclusion in this column.*

Starting with this issue, you may have noticed some changes in the Communicator format. It turns out that many of you print the newsletter. As a result the amount of colour has been reduced and most of the type is now black. Hopefully this will reduce your printings costs. The new format also features the upcoming monthly meeting topic and a photo cover.

Gary VE7AS wanted to respond to one of the most asked questions on the program forms handed out at the September 14th meeting. It was a question about how to select equipment and the use of HF. These and other "New Ham" questions will be answered at the December 3rd New Ham Seminar, an all day Saturday Seminar open to all new Hams for free. It was to be at the training centre, but we got bumped, so it will be in the upstairs classroom next door at the fire hall, a scaled down version because we won't have the room to do much else. Gary asks that anyone interested contact him at ve7as@rac.ca for details.

Thanks to Karla Wakefield VA7KJW who snapped them and John Brodie VA7XB who passed them on, we have photos of the Burnaby Amateur Radio Club Foxhunt held recently.

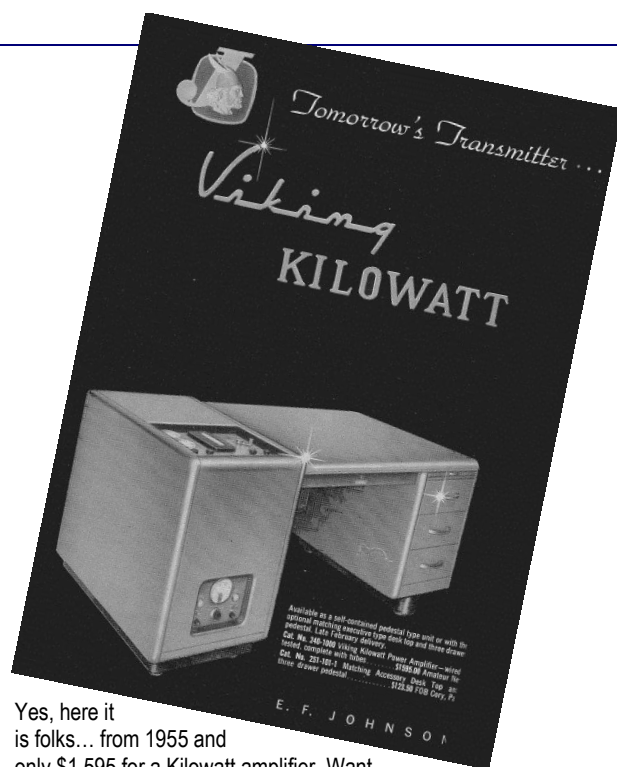
The results from weekend of Sept 10 & 11:

Saturday 2m

Gold Nick Roethe DF1FO
Silver Les Tocko VA7OM
Bronze Keith Witney VE7MID

Sunday 80m

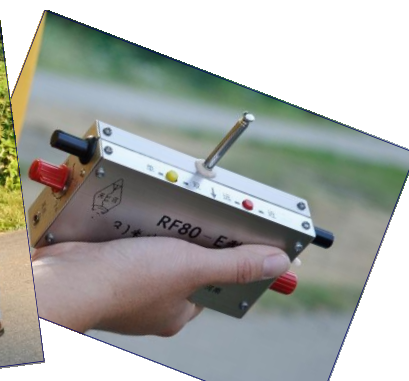
Gold Les Tocko VA7OM
Silver Nick Roethe DF1FO
Bronze Grant Van Skiver VE7GVS



Yes, here it is folks... from 1955 and only \$1,595 for a Kilowatt amplifier. Want the matching 'executive' desk? That'll be another \$123.50



We'll have to get John to show & tell that gizmo he's using!



SARC Snapshot Operator Skills Training

SARC's "Operator Skills Training" program was launched on Saturday and Sunday, Sept. 24-25 at John VA7XB's QTH under the watchful guidance of Jim Smith VE7FO. The initial group consists of those members who have had some HF experience, expressed an interest in contesting and may become the trainers of the future.



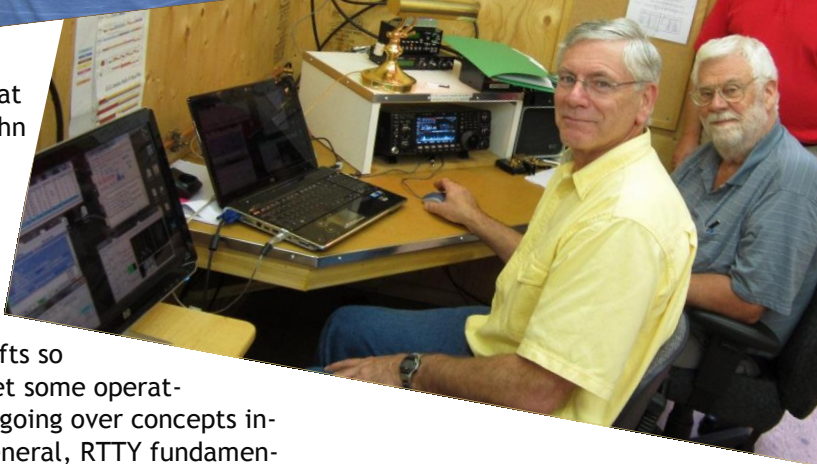
Enthusiastic participants at the initial stages were John VE7AXU, John VE7TI, Kelvin VA7KPH, Alan VA7BIT and Susan VE7IIE. The coaching was focused around the CQ WW RTTY contest and trainees were divided into two shifts so that each person could get some operating time. Jim started by going over concepts involved in contesting in general, RTTY fundamentals, tuning and logging using N1MM and MMTTY software. Each trainee then was given the opportunity to make and log some contacts, first using

"search and pounce" mode, then moving on to "run" mode which involved sending CQ and waiting for stations to come to us. Between quiet periods, once the rhythm of the exchanges was established, the contacts came fast and furious. Considering that radio black-outs from solar activity were experienced throughout the weekend, and only a few hours were actually spent on making contacts, it was a productive exercise.

The group made 250 contacts in 38 CQ zones in 41 countries including a few in Europe, the South Pacific and South America. Claimed score was 91,368.

Next challenge: an SSB or CW contest! Many thanks to Jim for his diligent coaching and giving up of most of a weekend for the benefit of SARC.

~ John VA7XB



News You Can Lose The Lighter Side Of Technology

If you had purchased \$1,000 of shares in Delta Airlines one year ago, you would have \$49.00 today.
 If you had purchased \$1,000 of shares in AIG one year ago, you would have \$33.00 today.
 If you had purchased \$1,000 of shares in Lehman Brothers one year ago, you would have \$0.00 today.
 But, if you had purchased \$1,000 worth of beer one year ago, drank all the beer, then turned in the aluminum cans for recycling refund, you would have received a \$214.00.

Based on the above, the best current investment plan is to drink heavily & recycle. It is called the 401-Keg.
 A recent study found that the average Canadian walks about 900 miles a year. Another study found that Canadians drink, on average, 22 gallons of alcohol a year. That means that, on average, Canadians get about 41 miles to the gallon!

Makes you damned proud to be a Canadian eh!!!

Interesting Radio Install



How do guys justify to their wives having a car like this?
 "Honey, really... the back seat is a much safer place to sit!"



Next time you have to transport some tower sections you may want to keep this method in mind.

[cincinnati craigslist](#) > [for sale / wanted](#) > [electronics](#)

Avoid scams and fraud by dealing locally! Beware any deal involving Western Union, Moneygram, wire transfer, cashier's protection/certification/guarantee. [More info](#)

4cx15000 cb radio - \$8000 (williamstown ky)

Date: 2011-06-01, 7:32PM EDT

Reply to: sale-k8trn-2415672355@craigslist.org [\[Errors when replying to ads?\]](#)

linear cb amplifier capable of 30000 watts or more. for more info call 8598236306 no emails please

- Location: williamstown ky
- it's NOT ok to contact this poster with services or other commercial interests



PostingID: 2415672355

From the Cincinnati Craigslist site.
 300,000+ Watts, now THAT's high power!

If at first you don't succeed,
 skydiving is not for you.



QRT John Brodie VA7XB

A questionnaire was passed around at SARC's September meeting in which the members present indicated their wishes for future programs and activities. Many good suggestions came back to Gary, VE7AS, who is looking after program organization for the 2011/2012 season. If you were not present at the meeting and therefore did not complete a questionnaire, I encourage you to go onto the SARC website www.ve7sar.net, fill it out and send it in, or you can complete the questionnaire by clicking this link: [questionnaire2011](#).

Coincidentally in September, SARC passed the milestone of 100 members, pushed over the top by those who have paid for the basic ham class starting at the end of September. As gratifying as that is, the large membership comes with an ever-growing problem, which I will call "critical mass". What we have is an increasing membership base, many of whom are beginners, plus interest in new programs but a limited number willing to do the work. At the Sept. 14th meeting, we discussed the many jobs that must be performed over the next year if the Club is to continue serving its membership. Although many of the standard tasks have been filled, there is an unsatisfactory number of jobs with no volunteers.

The most prominent gaps include absence of persons willing to take responsibility for 1) the Christmas party and 2) equipment (including tower) maintenance. In addition, no one has volunteered to address nominations for future Executive/Director positions including the related job of succession planning. In other cases, we have no backup for the person in charge. Some of these tasks in the past have been performed by willing members of the Executive, who have done double- or triple-duty. We also have quite a few members who come out to meetings and events, but take no active part in the organization. I am not talking about new members, who need time to get to know the others, to become familiar with the club culture and be eased in slowly. However, we cannot continue to rely on the same few to take responsibility for an expanding program. In future, the scope of activities will have to be based on the number of volunteers. I ask that you look over the chart and give some thought to how you can contribute to the success of your club.

Remember that Oct. 2 is Delta Amateur Radio Society's Com-Fest flea market at which SARC and SEPARS will be sharing a table. Please consider attending and supporting Delta at this event. If you have items to dispose of and are an SARC member, you have the opportunity to sell them at our table.

October Contest Calendar

All dates, unless otherwise stated, are UTC. See the [ARRL Contest Branch page](#), the [ARRL Contest Update](#) and the [WA7BNM Contest Calendar](#)

PSK Rumble - The Fall Classic--Digital, from Oct 1, 0000Z to Oct 1, 2400Z. Bands (MHz): 1.8-28, 50. Exchange: Name and call area (see Web site). Logs due: Oct 31. [Rules](#)

California QSO Party--Phone, CW from Oct 1, 1600Z to Oct 2, 2200Z. Bands (MHz): 1.8-28, 50, 144. Exchange: Serial and state/prov/"DX" or CA county. Logs due: Oct 31. [Rules](#)

ARS Spartan Sprint--CW, from Oct 4, 0200Z to Oct 4, 0400Z. Bands (MHz): 3.5-28. Monthly on the first Monday evening local time. Exchange: RST, S/P/C, and power. Logs due: 2 days. [Rules](#)

SNS and NS Weekly Sprints--CW, from Oct 7, 0200Z to Oct 7, 0300Z. Bands (MHz): 1.8-14. Weekly on Thursday evenings local time. Exchange: Serial, name, and S/P/C. Logs due: 2 days. [Rules](#)

DX/NA YLRL Anniversary Party--Phone, CW, Digital, from Oct 7, 1400Z to Oct 9, 0200Z. Bands (MHz): 1.8-28. Exchange: Serial, RST, and section/province/country. Logs due: 30 days. [Rules](#)

Makrothen RTTY Contest--Digital, from Oct 8, 0000Z to Oct 9, 1600Z. Bands (MHz): 3.5-28. Multiple operating periods. Exchange: 4-character grid square. Logs due: Nov 14. [Rules](#)

Oceania DX CW Contest--CW, from Oct 8, 0800Z to Oct 9, 0800Z. Bands (MHz): 1.8-28. Exchange: RST and serial. Logs due: Nov 7. [Rules](#)

Arizona QSO Party--Phone, CW, Digital, from Oct 8, 1600Z to Oct 9, 0600Z and Oct 9, 1400Z to Oct 9, 2359Z. Bands (MHz): 3.5-28, 50, 144. Multiple operating periods - See website for frequencies. Exchange: RS(T) and AZ county or S/P/C. Logs due: Oct 31. [Rules](#)

FISTS Fall Sprint--CW, from Oct 8, 1700Z to Oct 8, 2100Z. Bands (MHz): 3.5-28. Exchange: RST, S/P/C, name, FISTS number or pwr. Logs due: 30 days. [Rules http://www.fists.org](http://www.fists.org)

North American RTTY Sprint--Digital, from Oct 9, 0000Z to Oct 9, 0400Z. Bands (MHz): 3.5-14. Exchange: Both call signs, serial, QTH, name. Logs due: 7 days. [Rules](#)

Straight Key Club Weekend Sprintathon--CW, from Oct 9, 0000Z to Oct 9, 2359Z. Bands (MHz): 1.8-28, 50. Monthly on the second Sunday local time. Exchange: RST, QTH, name, SKCC nr or "none". Logs due: 5 days. [Rules](#)

10-10 Sprint--Phone, CW, Digital, from Oct 10, 0001Z to Oct 10, 2359Z. Bands (MHz): 28. Exchange: Call, name, 10-10 number, S/P/C. Logs due: Oct 25. [Rules](#)